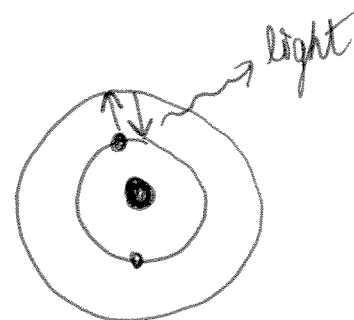


LESSON 17: TECHNICOLOR ATOMS – Flame Tests

60. What was responsible for the different flame colors in this lab? (Try to draw a picture to describe movement of electrons in the atom and how this produces different colors.)

Electrons get excited by heat and jump out to a higher energy electron shell. When they fall back down a photon of light is emitted

**LESSON 18: Valence and Core Electrons**

61. What is the difference between valence and core electrons?

Valence e^- are in the outermost shell

62. In terms of electrons, what do fluorine, chlorine, and bromine have in common?

They all have 7 valence electrons

63. Why do elements in the same group have similar properties?

They have the same # of valence e^-

64. How many valence and core electrons are in a neutral atom of:

a. magnesium

2 valence

10 core

b. oxygen

6 valence

2 core

c. bromine

7 valence

28 core

LESSON 19: Ions

65. Which noble gas do each of the following elements want to be like? Why do elements want to "be like the noble gases"? They are stable with a full valence shell

a. sodium

Ne

b. calcium

Ar

d. aluminum

Ne

e. oxygen

Ne

66. For each of the following elements, state whether the atom has to gain or lose electrons, the formula of the ion, and whether the ion is a cation or an anion.

a. beryllium

lose 2 e^-

Be^{2+}

cation

b. nitrogen

gain 3 e^-

N^{3-}

anion

c. sulfur

gain 2 e^-

S^{2-}

anion

67. How many protons, neutrons, and electrons are in:

a) Cl^-

b. Mg^{2+}

From Periodic Table { Atomic # = 17 = 17 pt
Mass = 35 (protons + neutrons)
so $35 - 17 = 18 n^0$
Charge is -1 so 18 e^-

12 protons
10 electrons
12 neutrons